

WHAT IS CLAIMED IS:

1. An exhaust emission control system of an internal combustion engine for cleaning exhaust gases discharged from the internal combustion engine comprising:

a exhaust system defining a main exhaust passage connected to an internal combustion engine; and a bypass exhaust passage which branches off and joins back to the main exhaust passage;

a switching device switching an exhaust gas flow path to either of the main exhaust passage and the bypass exhaust passage;

an adsorbent material disposed within the main exhaust passage for adsorbing unburned constituents of exhaust gases introduced into the main exhaust passage and releasing the unburned constituents as temperature increases; and

a control device operable to control the switching device,

wherein the control device switches the exhaust gas flow path to the main exhaust passage when the adsorbent material absorbs the unburned constituents, the control device switches the exhaust gas flow path to the bypass exhaust passage when the absorbed unburned constituents

is released from the adsorbent material, and the control device switches the exhaust gas flow path to the main exhaust passage when a release of the absorbed unburned constituents is completed.

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2. The exhaust emission control system for the internal combustion engine according to claim 1, wherein the exhaust system has the bypass exhaust passage including an annular passage portion surrounding in an annular fashion a portion of the main exhaust passage, on which the adsorbent material is disposed.

3. The exhaust emission control system according to claim 2, wherein the switching device has a switching valve element adapted to freely move between an open position where the main exhaust passage is opened whereas the bypass exhaust passage is closed and a closed position where said main exhaust passage is closed whereas the bypass exhaust passage is opened,

20 a biasing device for biasing the switching valve element to the open position, and

an actuator for driving the switching valve element from the open position to the closed position against the biasing device.

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4. The exhaust emission control system according to claim 1, wherein the switching device has a switching valve element adapted to freely move between an open position where the main exhaust passage is opened whereas
5 the bypass exhaust passage is closed and a closed position where said main exhaust passage is closed whereas the bypass exhaust passage is opened,

a biasing device for biasing the switching valve element to the open position, and

10 an actuator for driving the switching valve element from the open position to the closed position against the biasing device.

5. The exhaust emission control system according to claim 3, wherein the switching device further comprises:

a rotational shaft adapted to be driven to rotate by the actuator; and

20 an arm connected between the switching valve element and the rotational shaft for driving the switching valve element in conjunction with a rotation of the rotational shaft,

wherein the rotational shaft and the arm are disposed in the bypass exhaust passage.

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6. The exhaust emission control system according to claim 4, wherein the switching device further comprises:

a rotational shaft adapted to be driven to rotate
5 by the actuator; and

an arm connected between the switching valve element and the rotational shaft for driving the switching valve element in conjunction with a rotation of the rotational shaft,

10 wherein the rotational shaft and the arm are disposed in the bypass exhaust passage.

7. The exhaust emission control system according to claim 1, wherein the absorbent material includes a
15 zeolite.